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CLAIMS

1. An electric contact probe assembly, comprising:

a non-electroconductive support sheet having a front and reverse sides and at least one through hole;

an electroconductive patch attached to a part of the support sheet adjacent to the through hole;

an electroconductive resilient probe member having a base end attached to the patch and a free end projecting from the front side of the support sheet; and

a circuit board placed over the reverse side of the support sheet and having a circuit layer incorporated therein and a terminal facing the reverse side of the support sheet;

the support sheet being fixedly attached to the circuit board by an electroconductive bonding member which both physically and electrically connects the patch with the terminal.

2. An electric contact probe assembly according to claim 1, wherein the electroconductive resilient probe member comprises a compression coil spring.

3. An electric contact probe assembly according to claim 2, wherein the compression coil spring comprises a closely wound conical section at a free end thereof.

4. An electric contact probe assembly according to claim 2, wherein the compression coil spring comprises a coarsely wound section at a free end thereof which is adapted to fit over a solder ball which is desired to be contacted.

5. An electric contact probe assembly according to claim 2, further comprising a housing layer placed over the front side of the support sheet, the housing layer defining a holder hole through which a free end of the compression coil spring projects.

6. An electric contact probe assembly according to claim 5, wherein an end of the holder hole remote from the support sheet is provided with an internal flange which controls a projecting length of the free end of the compression coil spring.

7. An electric contact probe assembly according to claim 1, wherein the electroconductive resilient probe member comprises a cantilever sheet spring.

8. An electric contact probe assembly according to claim 1, wherein the patch is attached to the front side of the support sheet so as to expose at least a part of the patch to the interior of the through hole.

9. An electric contact probe assembly according to claim 8, wherein the patch entirely covers the through hole, and is provided with a central opening.

10. An electric contact probe assembly according to claim 1, wherein the patch is attached to the reverse side of the support sheet so as to expose at least a part of the patch to the interior of the through hole.

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11. An electric contact probe assembly according to claim 10, wherein the patch includes an axial projection which extends into the through hole.

12. An electric contact probe assembly according to claim 11, wherein the electroconductive resilient probe member comprises a compression coil spring, and the axial projection of the patch is substantially cylindrical in shape, the base end of the compression coil spring being fitted into the cylindrical axial projection of the patch.

13. An electric contact probe assembly according to claim 11, wherein the electroconductive resilient probe member comprises a compression coil spring, and the axial projection of the patch is substantially cylindrical in shape, the base end of the compression coil spring being fitted onto the cylindrical axial projection of the patch.

14. An electric contact probe assembly according to claim 1, wherein the electroconductive bonding member comprises a solder lump.

15. An electric contact probe assembly according to claim 1, wherein the base end of the resilient probe member is attached to the patch by soldering.

16. A method for making an electric contact probe assembly, comprising the steps of:

preparing a non-electroconductive support sheet having a front and reverse sides and at least one through hole;

attaching an electroconductive patch to a part of the support sheet adjacent to the through hole;

attaching a base end of an electroconductive resilient probe member to the patch so as to cause a free end thereof project from the front side of the support sheet;

preparing a circuit board having a circuit layer incorporated therein and a terminal exposed on one side thereof;

depositing an amount of soldering or brazing material on at least one of the patch and the circuit board terminal;

placing the circuit board over the reverse side of the support sheet with the terminal directly opposing the patch; and

melting and resolidifying the soldering or brazing material so as to connect the patch and the circuit board terminal together both electrically and physically.

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